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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,417	12/31/2003	Paul Johnson	24NS-129203	4646
7590 Patrick W. Rasche Armstrong Teasdale LLP Suite 2600 One Metropolitan Square St. Louis, MO 63102		03/26/2007	EXAMINER SAINT SURIN, JACQUES M	
			ART UNIT	PAPER NUMBER 2856
SHORTENED STATUTORY PERIOD OF RESPONSE 3 MONTHS		MAIL DATE 03/26/2007	DELIVERY MODE PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/750,417	JOHNSON ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	Jacques M. Saint-Surin	2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 22 December 2006.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-20 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

***Response to Amendment***

1. This Office action is responsive to the amendment of 12/22/06.

***Claim Objections***

2. Claim 1 is objected to because of the following informalities: typographical error. The term "pivotably" should be replaced with pivotably. Appropriate correction is required.
3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Claim Rejections - 35 USC § 103***

4. Claims 1-3, 5, 11-12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nusbickel et al. (US Patent 3,616,684) in view of Johnson (US Patent 6332,011).

Regarding claims 1, 11 and 15, Nusbickel discloses a method of inspecting a portion of weld (ultrasonic inspection of Fig. 1), comprising :

rotatably mounting at least one ultrasonic phased array probe (rotatably mounted on said end plates are wheels for engaging the surface of the plate 10, row of transducers 14 is shown inserted through an opening in the upper end of the housing 16 and coupled to a supply of liquid 52, e.g. water contained in said housing, see: col. 2, lines 66-69 and Fig. 1) within a probe housing (16) containing a liquid (52) therein, each transducer having a plurality of elements (transducer 14 inherently includes plurality of

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elements), the at least one ultrasonic phased array probe (14) rotatable within the probe housing (16);

attaching the housing (16) adjacent an outer surface (conduit 46) of the portion of the weld (10) such that the liquid (52) is adjacent the outer surface of the portion of the weld (10), and scanning the weld (10) with the at least one ultrasonic phased array probe (14). However, Nusbickel et al. does not specifically disclose or suggest an scanning the weld with the at least one ultrasonic phased array probe. Johnson discloses ultrasonic beam 100 is focused so that a focal point 108 of beam 100 aligns with upper fusion line 104 of weld 70 and outer surface 92 of shroud head flange 54, see: col. 4, lines 48-50). It would have been obvious to one having ordinary skill in the art at the time of the invention to employ in Nusbickel the scanning of Johnson because it provides a phased array ultrasonic probe on a top surface of the shroud head flange, emitting an ultrasonic beam from the ultrasonic probe, electronically steering the ultrasonic beam to scan the weld joining the shroud head flange and the upper shroud section with the beam moving from an outer surface of the shroud head flange to an inner surface of the shroud head flange, and acquiring scan data over the length of the scan thereby, providing a reliable inspection in an efficient manner.

Regarding claims 11 and 15, they are similar in scope with claim 1 and therefore, they are rejected for the reasons set forth for that claim.

Regarding claim 2, Nusbickel does not specifically disclose or suggest the weld (70) is between at least two similar materials. Johnson discloses (shroud head flange and upper shroud section) see: col. 1, lines 65-66. It would have been obvious to one

having ordinary skill in the art at the time of the invention to utilize in Nusbickel the techniques of Johnson because one of the ordinary skill in the art would be motivated to recognize the advantages and desirability to use weld as testing material.

Regarding claim 3, Nusbickel does not disclose the weld is between two dissimilar materials. Johnson discloses H1 weld 70 (upper shroud section and upper heat affected zone), see: col. 1, lines 66-67. It would have been obvious to one having ordinary skill in the art at the time of the invention to utilize in Nusbickel the techniques of Johnson because one of the ordinary skill in the art would be motivated to recognize the advantages and desirability to use weld as testing material.

Regarding claim 5, Nusbickel in view of Johnson discloses disposed in front of and parallel to the housing 16 is a conduit 46 which is supplied with a coupling liquid, e.g. water, by a reservoir such as a storage tank mounted on the carriage 36, see: col. 2, lines 54-65.

Regarding claim 12, Nusbickel does not disclose the phased array probe includes at least one transducer configured to actuate a frequency, a pitch and an aperture. Johnson discloses referring to FIGS. 3 and 4, phased array probe contains one linear array transducer having a plurality of elements 98 which emits an ultrasonic sound beam 100. The basic parameters of phased array probe 96 are defined as frequency, aperture A, element size X, element width Y, pitch or element spacing P, and number of elements 98, see: col. 3, lines 58-64. Furthermore, Nusbickel in view of Johnson discloses emitting an ultrasonic sound beam from the ultrasonic probe, electronically steering the ultrasonic sound beam to scan the weld joining the shroud

head flange and the upper shroud section with the beam moving from an outer surface of the shroud to an inner surface of the shroud, and acquiring scan data over a length of the scan (see: col. 2, lines 1-7 of Johnson). Fig. 4 shows at least two pipes 70 and 76.

6. Claims 4, 7-10, 13-14, 16 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nusbickel et al. (US Patent 3,616,684) in view of Johnson (US Patent 6332,011) and further in view of Sproule (US Patent 3,938,372).

Regarding claims 4, 7-10, 14, 16 and 18-20, Nusbickel in view of Johnson does not disclose wherein the scanning weld with the at least one ultrasonic phased array probe comprises electrically steering at least one of the elements such that an ultrasonic beam is emitted at a plurality of steering angles. Sproule discloses in the case of immersion testing, which includes angle-beam testing, the word is applied only to the transducer and the associated housing, the changes in angle in the test piece being carried out by changing the angle of the probe in relation to the surface of the test piece (see: col. 2, lines 15-20). Sproule further discloses a continuously variable beam angle is determined by the angular setting of the transducer within the liquid-filled cell, see: col. 2, lines 26-28. It would have been obvious to one having ordinary skill in the art at the time of the invention to utilize in the combination of Nusbickel and Johnson the techniques of Sproule because it provides a liquid filled cell having a window for application to the test piece and the transducer is pivotable to provide variable angle of wave incidence at the window and an external scale, calibrated in angle of refraction of resultant waves in the test piece, permits of pivoting the transducer for the

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corresponding angle of incidence by way of a mechanical linkage thereby realizing a complete and reliable inspection of the weld in an efficient manner..

5. Claims 6 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nusbickel et al. (US Patent 3,616,684) in view of Johnson (US Patent 6332,011) and further in view of Watts (US Patent 3,202,218).

The difference between these claims and Nusbickel in view of Johnson is the recitation of releasably attaching the housing such that a water-tight seal exists between the housing and the surface of the portion of the weld, wherein the seal is an elastomer. Watts discloses a sealing ring (not shown) between the rings 54 and the conduit makes a water-tight seal, see: col. 3, lines31-33. Note that the water-tight seal is equivalent to an elastomer. It would have been obvious to one of the ordinary skill in the art at the time of the invention to utilize in Nusbickel in view of Johnson the sealing of Watts because it would provide any suitable means for releasably securing the housing to the base thereby providing an effective welding connection between the housing and the surface of the weld.

#### ***Response to Arguments***

6. Applicant's arguments filed 12/22/06 have been fully considered but they are not persuasive.

7. In response to applicant's argument that "Particularly, Nusbickel et al. and Johnson, alone or in combination, do not describe nor suggest pivotably mounting at least one ultrasonic phased array probe within a probe housing containing a liquid"

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the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

8. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

9. In response to applicant's argument that "therefore, combining the teachings of Johnson with the teachings of Nusbickel et al. do not describe nor suggest all the elements of claim 11, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

### ***Conclusion***

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

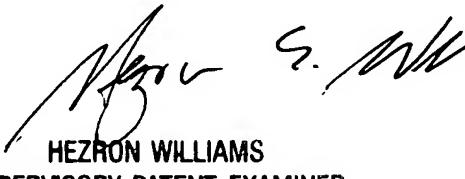
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacques M. Saint-Surin whose telephone number is (571) 272-2206. The examiner can normally be reached on Mondays to Fridays between 10:30 A.M and 800 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Jacques M. Saint-Surin  
March 14, 2007

  
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